

# SAFETY DATA SHEET

**Product Identifier: Maxpar® Antibody Labeling Kit (Lu)**
**SDS ID: MSDS (Lu) Rev: 06**
**Catalog ID number: 201175 (subcomponent of Cat# 201300, Maxpar® X8 Multimetal Labeling Kit - 40 Rxn)**
**SECTION 1 - IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING**
**Contact information**

<b>General</b>	Fluidigm Corporation 2 Tower Place, Suite 2000, South San Francisco, CA 94080 Main (U.S.): +1 (650) 266-6000 E-mail: techsupport@fluidigm.com
<b>Emergency telephone number</b>	+ (650) 266-6100 (outside US) + (866) 358-4354 (toll free)

<b>Product identifier</b>	Maxpar® Antibody Labeling Kit (Lu)
<b>Synonyms</b>	None identified
<b>Trade names</b>	None identified
<b>Chemical family</b>	Mixture - contains nitric acid
<b>Relevant identified uses of the substance or mixture and uses advised against</b>	For research use only. Not for use in diagnostic procedures.
<b>Note</b>	This SDS is written to address potential health and safety issues associated with the handling of the formulated product.

**SECTION 2 - HAZARDS IDENTIFICATION**
**Classification of the substance or mixture**

<b>Globally Harmonized System [GHS]</b>	Not classified.
<b>AU Hazard Classification (NOHSC)</b>	Hazardous Substance. Non-hazardous goods.

**Label elements**

<b>GHS hazard pictogram</b>	None required
<b>GHS signal word</b>	None required
<b>GHS hazard statements</b>	None required
<b>GHS precautionary statements</b>	None required

**Other hazards** May cause eye/skin irritation. Mixture not yet fully tested.

**Note** This mixture is not classified as hazardous according to Regulation EC No 1272/ 2008 (EU CLP) and Hazard Communication Standard No. 1910.1200 (US OSHA). The pharmacological, toxicological and ecological properties of this mixture have not been fully characterized.

**SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS**

<u>Ingredient</u>	<u>CAS #</u>	<u>EINECS/ ELINCS#</u>	<u>Amount</u>	<u>GHS Classification</u>
Lutetium (III) Chloride	15230-79-2	N/A	1.4%	Not classified
Ammonium Acetate	631-61-8	211-162-9	<1%	EI2: H319; AA3: H402

**Note** Ammonium acetate is considered hazardous. Lutetium (III) Chloride is not considered hazardous. The remaining components are non-hazardous and/or present at amounts below reportable limits. See Section 16 for full text of GHS classifications.

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## SECTION 4 - FIRST AID MEASURES

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### Description of first aid measures

<b>Immediate Medical Attention Needed</b>	No
<b>Eye Contact</b>	If easy to do, remove contact lenses, if worn. Immediately flush eyes with copious quantities of water for at least 15 minutes. If irritation occurs or persists, notify medical personnel and supervisor.
<b>Skin Contact</b>	Wash exposed area with soap and water and remove contaminated clothing/shoes. If irritation occurs or persists, notify medical personnel and supervisor.
<b>Inhalation</b>	Immediately move exposed subject to fresh air. If not breathing, give artificial respiration. If breathing is labored, administer oxygen. Immediately notify medical personnel and supervisor.
<b>Ingestion</b>	Do not induce vomiting unless directed by medical personnel. Do not give anything to drink unless directed by medical personnel. Never give anything by mouth to an unconscious person. Notify medical personnel and supervisor.
<b>Protection of first aid responders</b>	See Section 8 for Exposure Controls/Personal Protection recommendations.
<b>Most important symptoms and effects, both acute and delayed</b>	See Sections 2 and 11.
<b>Indication of immediate medical attention and special treatment needed, if necessary</b>	Medical conditions aggravated by exposure: None known or reported. Treat symptomatically and supportively.

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## SECTION 5 - FIREFIGHTING MEASURES

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<b>Extinguishing media</b>	Use water spray (fog), foam, dry powder, or carbon dioxide, as appropriate for surrounding fire and materials.
<b>Specific hazards arising from the substance or mixture</b>	No information identified. May emit carbon monoxide, carbon dioxide, nitrogen-, chloride-, and metal-containing compounds.
<b>Flammability/Explosivity</b>	Not expected to be flammable or explosive.
<b>Advice for firefighters</b>	Wear full protective clothing and a self-contained breathing apparatus with a full facepiece operated in the pressure demand or other positive pressure mode. Decontaminate all equipment after use.

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## SECTION 6 - ACCIDENTAL RELEASE MEASURES

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<b>Personal precautions, protective equipment and emergency procedures</b>	If product is released or spilled, take proper precautions to minimize exposure by using appropriate personal protective equipment (see Section 8). Area should be adequately ventilated. Do not breathe mist/vapors/spray.
<b>Environmental precautions</b>	Do not empty into drains. Avoid release to the environment.
<b>Methods and material for containment and cleaning up</b>	Dike area to contain spill. Maintain ventilation until all vapors have been eliminated. Take precautions as necessary to prevent contamination of ground and surface waters. If vials are crushed or broken, DO NOT CAUSE MATERIAL TO BECOME AIRBORNE. For small spills, soak up material with absorbent, e.g., paper towels. For large spills, cordon off spill area and minimize the spreading of spilled material. Soak up material with absorbent. Collect spilled material, absorbent, and rinse water into suitable containers for proper disposal in accordance with applicable waste disposal regulations (see Section 13). Decontaminate the area twice.
<b>Reference to other sections</b>	See Sections 8 and 13 for more information.

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## SECTION 7 - HANDLING AND STORAGE

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<b>Precautions for safe handling</b>	Follow recommendations for handling pharmaceutical agents (i.e., use of engineering controls and/or other personal protective equipment if needed). Avoid breathing vapor or mist. Do not permit eating/drinking/smoking near this material. All materials used for transferring or preparing this product must be considered contaminated and disposed of properly.
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**Conditions for safe storage including any incompatibilities**

Keep from contact with clothing and other combustible materials. Store at 2-8°C in tightly closed container. Avoid strong oxidizers. Store in sealed containers that are appropriately labeled. Do not store in metal or glass containers. Do not store in direct sunlight. Do not store near organic substances.

**Specific end use(s)**

No information identified.

**SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION**
**Note**

Dispose of broken vials/syringes in a sharps container.

**Control Parameters/Occupational Exposure Limit Values**

<u>Compound</u>	<u>Issuer</u>	<u>Type</u>	<u>OEL</u>
Lutetium (III) Chloride	--	--	--
Ammonium Acetate	--	--	--

**Exposure/Engineering controls**

Selection and use of containment devices and personal protective equipment should be based on a risk assessment of exposure potential. Use local exhaust and/or enclosure at mist/ aerosol/spray-generating points. Emphasis is to be placed on closed material transfer systems and process containment, with limited open handling. High- energy operations such as spraying or fluidizing should be done within an approved emission control or containment system.

**Respiratory protection**

Choice of respiratory protection should be appropriate to the task and the level of existing engineering controls. For routine handling tasks, an approved and properly fitted air-purifying respirator with appropriate HEPA filters should provide ancillary protection based on the known or foreseeable limitations of existing engineering controls. Use a powered air-purifying respirator equipped with appropriate HEPA filters or combination filters or a positive-pressure air-supplied respirator if there is any potential for an uncontrolled release, when exposure levels are not known, or in any other circumstances where a lower level of respiratory protection may not provide adequate protection.

**Hand protection**

Wear nitrile or other impervious gloves if skin contact is possible. When the material is dissolved or suspended in an organic solvent, wear gloves that provide protection against the solvent.

**Skin protection**

Wear appropriate gloves, lab coat, or other protective overgarment if skin contact is likely. Base the choice of skin protection on the job activity, potential for skin contact and solvents and reagents in use.

**Eye/face protection**

Wear safety glasses with side shields, chemical splash goggles, or full face shield, if necessary. Base the choice of protection on the job activity and potential for contact with eyes or face. An emergency eye wash station should be available.

**Environmental Exposure Controls**

Avoid release to the environment and operate within closed systems wherever practicable. Air and liquid emissions should be directed to appropriate pollution control devices. In case of spill, do not release to drains. Implement appropriate and effective emergency response procedures to prevent release or spread of contamination and to prevent inadvertent contact by personnel.

**Other protective measures**

Wash hands in the event of contact with this product/mixture, especially before eating, drinking or smoking. Protective equipment is not to be worn outside the work area (e.g., in common areas or out-of-doors).

**SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**
**Information on basic physical and chemical properties**

<b>Appearance</b>	Clear liquid
<b>Color</b>	Colorless
<b>Odor</b>	No information identified.
<b>Odor threshold</b>	No information identified.
<b>pH</b>	No information identified.
<b>Melting point/freezing point</b>	No information identified.
<b>Initial boiling point and boiling range</b>	No information identified.

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<b>Flash point</b>	No information identified.
<b>Evaporation rate</b>	No information identified.
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Upper/lower flammability or explosive limits</b>	No information identified.
<b>Vapor pressure</b>	No information identified.
<b>Vapor density</b>	No information identified.
<b>Relative density</b>	No information identified.
<b>Water solubility</b>	Fully soluble in water.
<b>Solvent solubility</b>	No information identified.
<b>Partition coefficient (n-octanol/water)</b>	No information identified.
<b>Auto-ignition temperature</b>	No information identified.
<b>Decomposition temperature</b>	No information identified.
<b>Viscosity</b>	No information identified.
<b>Explosive properties</b>	No information identified.
<b>Oxidizing properties</b>	No information identified.

**Other information**

<b>Molecular weight</b>	Not applicable (Mixture)
<b>Molecular formula</b>	Not applicable (Mixture)

**SECTION 10 - STABILITY AND REACTIVITY**

<b>Reactivity</b>	Not expected to be reactive.
<b>Chemical stability</b>	Stable under normal handling and storage conditions.
<b>Possibility of hazardous reactions</b>	Not expected to occur.
<b>Conditions to avoid</b>	Keep away from incompatible materials.
<b>Incompatible materials</b>	Strong oxidizers.
<b>Hazardous decomposition products</b>	Hydrogen chloride gas, metal oxides.

**SECTION 11 - TOXICOLOGICAL INFORMATION**
**Information on toxicological effects**

<b>Route of entry</b>	May be absorbed by inhalation, skin contact and ingestion.
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**Acute toxicity**

<u>Compound</u>	<u>Type</u>	<u>Route</u>	<u>Species</u>	<u>Dose</u>
Lutetium (III) Chloride	--	--	--	--
Ammonium Acetate	LD <sub>50</sub>	Intravenous	Mice	98 mg/kg
	LD <sub>50</sub>	Intraperitoneal	Rat	632 mg/kg
	LD <sub>50</sub>	Intraperitoneal	Mice	736 mg/kg

<b>Irritation/Corrosion</b>	No studies identified.
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<b>Sensitization</b>	No studies identified.
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<b>STOT-single exposure</b>	No studies identified.
<b>STOT-repeated exposure/Repeat-dose toxicity</b>	No studies identified.
<b>Reproductive toxicity</b>	No studies identified.
<b>Developmental toxicity</b>	No studies identified.
<b>Genotoxicity</b>	No studies identified.
<b>Carcinogenicity</b>	No studies identified. The ingredients in this mixture are not listed by NTP, IARC, ACGIH or OSHA as a carcinogen.
<b>Aspiration hazard</b>	No data available.
<b>Human health data</b>	See Section 2 - "Other hazards"

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**SECTION 12 - ECOLOGICAL INFORMATION**


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<b>Toxicity</b>	
<u>Compound</u>	<u>Type</u>
Lutetium (III) Chloride	--
Ammonium Acetate	LC <sub>50</sub> /48h
<u>Species</u>	<u>Concentration</u>
Cyprinus carpio	1.06 mg/L
<b>Persistence and Degradability</b>	No data identified.
<b>Bioaccumulative potential</b>	No data identified.
<b>Mobility in soil</b>	No data identified.
<b>Results of PBT and vPvB assessment</b>	Not performed.
<b>Other adverse effects</b>	No data identified.
<b>Note</b>	The environmental characteristics of this product/mixture have not been fully investigated. Releases to the environment should be avoided.

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**SECTION 13 - DISPOSAL CONSIDERATIONS**


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<b>Waste treatment methods</b>	Dispose of wastes in accordance to prescribed federal, state, and local guidelines, e.g., appropriately permitted chemical waste incinerator. Do not send down the drain or flush down the toilet. All wastes containing the material should be properly labeled. Rinse waters resulting from spill cleanups should be discharged in an environmentally safe manner, e.g., appropriately permitted municipal or on- site wastewater treatment facility.
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**SECTION 14 - TRANSPORT INFORMATION**


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<b>Transport</b>	Based on the available data, this product/mixture is not regulated as a hazardous material/dangerous good under EU ADR/RID, US DOT, Canada TDG, IATA, or IMDG.
<b>UN number</b>	None assigned.
<b>UN proper shipping name</b>	None assigned.
<b>Transport hazard classes and packing group</b>	None assigned
<b>Environmental hazards</b>	Based on the available data, this product/mixture is not regulated as an environmental hazard or a marine pollutant.
<b>Special precautions for users</b>	Avoid release to the environment.
<b>Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code</b>	Not applicable.
<b>Hazardchem Code/HIN</b>	None assigned.

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**SECTION 15 - REGULATORY INFORMATION**

<b>Safety, health and environmental regulations/legislation specific for the substance or mixture</b>	This SDS complies with the requirements under US, EU and GHS (EU CLP - Regulation EC No 1272/2008) guidelines. Consult your local/regional authorities for more information.
<b>Chemical safety assessment</b>	Not conducted.
<b>WHMIS classification</b>	Not classified.
<b>TSCA status</b>	Lutetium (III) chloride is not listed. Ammonium acetate is listed.
<b>SARA section 313</b>	Not listed.
<b>California proposition 65</b>	Not listed.
<b>Component Analysis - State</b>	Lutetium (III) chloride is not listed as hazardous. Ammonium acetate is listed as hazardous in CA, HI, MA, NJ, and PA
<b>Component Analysis – Chemical Inventory</b>	Lutetium (III) chloride is listed in the chemical inventory of the following countries: Taiwan  Ammonium acetate is listed in the chemical inventory of the following countries: Australia, Canada, China, EU, Japan, Korea, New Zealand, the Philippines, Taiwan and USA
<b>Additional information</b>	No other information identified.

**SECTION 16 - OTHER INFORMATION**

<b>NFPA Ratings</b>	<table border="0" style="width: 100%;"> <tr> <td style="border-bottom: 1px dotted black;"><b>Lutetium (III) chloride</b></td> <td style="border-bottom: 1px dotted black;"><b>Health: --</b></td> <td style="border-bottom: 1px dotted black;"><b>Fire: --</b></td> <td style="border-bottom: 1px dotted black;"><b>Reactivity: --</b></td> </tr> <tr> <td style="border-bottom: 1px dotted black;"><b>Ammonium acetate</b></td> <td style="border-bottom: 1px dotted black;"><b>Health: --</b></td> <td style="border-bottom: 1px dotted black;"><b>Fire: --</b></td> <td style="border-bottom: 1px dotted black;"><b>Reactivity: --</b></td> </tr> </table>	<b>Lutetium (III) chloride</b>	<b>Health: --</b>	<b>Fire: --</b>	<b>Reactivity: --</b>	<b>Ammonium acetate</b>	<b>Health: --</b>	<b>Fire: --</b>	<b>Reactivity: --</b>
<b>Lutetium (III) chloride</b>	<b>Health: --</b>	<b>Fire: --</b>	<b>Reactivity: --</b>						
<b>Ammonium acetate</b>	<b>Health: --</b>	<b>Fire: --</b>	<b>Reactivity: --</b>						
<b>Sources of data</b>	Information from published literature and internal company data.								
<b>Abbreviations</b>	ACGIH - American Conference of Governmental Industrial Hygienists; ADR/RID - European Agreement Concerning the International Carriage of Dangerous Goods by Road/Rail; AIHA - American Industrial Hygiene Association; CA – California; CAS# - Chemical Abstract Services Number; CLP - Classification, Labelling, and Packaging of Substances and Mixtures; DNEL - Derived No Effect Level; DOT - Department of Transportation; EINECS - European Inventory of New and Existing Chemical Substances; ELINCS - European List of Notified Chemical Substances; EU - European Union; GHS - Globally Harmonized System of Classification and Labeling of Chemicals; HI – Hawaii; IARC - International Agency for Research on Cancer; IDLH - Immediately Dangerous to Life or Health; IATA - International Air Transport Association; IMDG - International Maritime Dangerous Goods; LOEL - Lowest Observed Effect Level; LOAEL - Lowest Observed Adverse Effect Level; MA – Massachusetts; NIOSH - The National Institute for Occupational Safety and Health; NJ – New Jersey; NOEL - No Observed Effect Level; NOAEL - No Observed Adverse Effect Level; NTP - National Toxicology Program; OEL - Occupational Exposure Limit; OSHA - Occupational Safety and Health Administration; PA – Pennsylvania; PNEC - Predicted No Effect Concentration; SARA - Superfund Amendments and Reauthorization Act; STEL - Short Term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; US – United States; WHMIS - Workplace Hazardous Materials Information System								
<b>Issue Date</b>	May-2020								
<b>Revisions</b>	Revision 06: CHG-001511; Summary of revision: Updated Fluidigm Corporate Address in section 1, Issue date and revision in headed, footer and section 16.								



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### Disclaimer

The information and recommendations in this safety data sheet are, to the best of Supplier's knowledge, accurate as of the date of issue. Supplier gives no warranty whatsoever, including the warranties of merchantability or of fitness for a particular purpose. Any product purchased is sold on the assumption the purchaser shall determine the quality and suitability of the product. Supplier expressly disclaims any and all liability for incidental, consequential or any other damages arising out of the use or misuse of this product. No information provided shall be deemed to be a recommendation to use any product in conflict with any existing patent rights. Read the Safety Data Sheet before handling product. For Research Use Only. Not for use in diagnostic procedures.